

Claims

1. A method of providing one or more content items to at least one user terminal of a radio system, the content item being related to a broadcast media stream, characterized by:

5 (602) attaching the content item to a broadcasting time line of the broadcast media stream by a broadcasting system;

(604) broadcasting the broadcast media stream by a broadcasting system;

10 (608) synchronizing an internal time of the user terminal with the internal time of the broadcasting system;

(610) sending the content item attached to the broadcasting time line of the broadcast media stream from the radio system to the user terminal; and

15 (612) presenting the received content item in the user terminal at a given moment in time that is determined based on the attachment of the content item to the broadcasting time line and on the synchronization of the internal time of the user terminal with the internal time of the broadcasting system.

2. The method of claim 1, characterized by the method further comprising: sending synchronization data to the user terminal for synchronizing the internal time of the user terminal with the internal time of the broadcasting system and synchronizing the internal time of the user terminal based on the received synchronization data.

25 3. The method of claim 2, characterized by synchronizing the internal time of the radio system with the internal time of the broadcast system and sending the synchronization data from the radio system to the user terminal.

4. The method of claim 2, characterized by sending synchronization data with the broadcast media stream broadcasted by the broadcasting system to the user terminal.

30 5. The method of claim 4, characterized by using a Radio Data System (RDS) for sending the synchronization data from the broadcasting system.

35 6. The method of claim 1, characterized by synchronization of the internal time of the user terminal with the internal time of the broadcasting system comprises executing a synchronization algorithm in the user terminal.

7. The method of claim 6, characterized by executing the synchronization algorithm by:

sending signals from the user terminal to the radio system;

calculating round trip delays of said signals;

5 calculating the difference between the internal times of the user terminal and the radio system; and

synchronizing the internal time of the user terminal based on the calculated difference between the internal times.

8. The method of claim 1, characterized by the content item
10 being one or more of the following: a text, an audio, a video, an image, a multimedia presentation, and a series of these or any combination thereof.

9. The method of claim 1, characterized by the content item comprising an object identification of an object and the method further comprising sending a transaction signal with the object identification from the user terminal to the radio system and delivering the object of the object identification to
15 the user terminal through the radio system.

10. The method of claim 1, characterized by attaching the content item to the broadcast media stream by defining the content item's availability to the presentation prior, during and after the broadcast of the
20 broadcast media stream.

11. A media system comprising:

a broadcasting system (2000) configured to broadcast a broadcast media stream, characterized in that the media system further comprises:

25 a radio system (206) communicating with the broadcasting system (2000) and one or more user terminals (110),

the broadcasting system (2000) is further configured to attach one or more content items to a broadcasting time line of the broadcast media stream in the broadcasting system (2000);

30 the user terminal (110) is configured to synchronize an internal time of the user terminal (110) with the internal time of the broadcasting system (2000);

the radio system (206) is configured to send the content item attached to the broadcasting time line of the broadcast media stream to the user
35 terminal (110); and

the user terminal (110) is further configured to present the received content item in the user terminal (110) at a given moment in time that is determined based on the attachment of the content item to the broadcasting time line and on the synchronization of the internal time of the user terminal (110) with the internal time of the broadcasting system (2000).

12. The media system of claim 11, characterized in that the user terminal (110) is configured to receive synchronization data and to synchronize its internal time with the internal time of the broadcasting system (2000) based on the received synchronization data.

13. The media system of claim 12, characterized in that the radio system (206) is configured to synchronize its internal time with the internal time of the broadcasting system (2000) and to send the synchronization data to the user terminal (110).

14. The media system of claim 12, characterized in that the broadcasting system (2000) is configured to send the synchronization data to the user terminal (110) with the broadcast media stream.

15. The media system of claim 14, characterized in that the broadcasting system (2000) is configured to use a Radio Data System (RDS) to send the synchronization data to the user terminal (110).

16. The media system of claim 11, characterized in that the user terminal (110) is configured to synchronize the internal time of the user terminal (110) by executing a synchronization algorithm.

17. The media system of claim 16, characterized in that the user terminal (110) is configured to execute the synchronization algorithm by:
sending signals from said user terminal (110) to the radio system (206);

calculating round trip delays of said signals;

calculating the difference between the internal times of the user terminal (110) and the radio system (206); and

synchronizing the internal time of the user terminal (110) based on the calculated difference between the internal times.

18. The media system of claim 11, characterized in that the content item is one or more of the following: a text, an audio, a video, an image, a multimedia presentation, and a series of these or any combination thereof.

19. The media system of claim 11, characterized in that the content item comprises an object identification of an object and the user terminal (110) is further configured to send a transaction signal with the object identification from the user terminal (110) to the radio system (206) and the radio system (206) is configured to deliver the object of the object identification to the user terminal (110).

20. The media system of claim 11, characterized in that the broadcasting system (2000) is configured to attach the content item to the broadcast media stream by defining the content item's availability to the presentation prior, during and after the broadcast of the broadcast media stream.

21. A user terminal of a radio system, characterized in that the user terminal (110) is configured to:

synchronize the internal time of the user terminal (110) with the internal time of a broadcasting system (2000);

15 receive one or more content items through the radio system (206) which content items are attached to a broadcast media stream of the broadcasting system (2000); and

present the received content items attached to the broadcast media stream at a given moment in time that is determined based on the synchronization of the internal time of the user terminal (110) with the internal time of the broadcasting system (2000).

22. The user terminal of claim 21, characterized in that the user terminal (110) is configured to receive synchronization data and to synchronize its internal time with the internal time of the broadcasting system (2000) based on the received synchronization data

23. The user terminal of claim 22, characterized in that the user terminal (110) is configured to receive the synchronization data from the radio system (206) or from the broadcasting system (2000).

24. The user terminal of claim 21, characterized in that the user terminal (110) is configured to synchronize the internal time of the user terminal (110) by executing a synchronization algorithm in the user terminal (110).

25. The user terminal of claim 24, characterized in that the user terminal (110) is configured to execute the synchronization algorithm by:

35 sending signals to the radio system (206);
calculating round trip delays of the signals;

calculating the difference between the internal times of the user terminal (110) and the radio system (206); and

synchronizing the internal time of the user terminal (110) based on the calculated difference between the internal times.

- 5 26. The user terminal of claim 21, characterized in that the content item comprises an object identification of an object and the user terminal (110) is configured to send a transaction signal with the object identification from the user terminal (110) to the radio system (206) and to receive objects of the object identification delivered from the radio system (206).